Practitioner's Docket No.: 4617 *PATENT*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Steven H.Schwartzkopf
Application No.: 10/634,595 Group No.: 1724
Filed: 08/04/2003 Examiner: Hruskoci, Peter A.
For: Liquid Filtration Apparatus and Method of Embodying Super-Buoyant Filtration Particles

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

DECLARATION UNDER 37 C.F.R. ' 1.132

1. I, Steven H. Schwartzkopf, the inventor of this application and signing below, have been employed with Advanced Environmental Systems (AES) for 8 years. Currently, I am the President of the company.

   I received my B.S. degree from the University of Nebraska, with a Major in Zoology, and minors in Computer Science, Chemistry, and Mathematics. I received my M.A. and Ph.D. degrees in Systems Ecology from the University of California, Davis. Prior to founding AES, I worked approximately 10 years at NASA's Ames Research Center in Mountain View, California, and then approximately 10 years at Lockheed Missiles and Space Company in Sunnyvale, California. In both positions, I was responsible for performing and supervising research and development of advanced human life support technologies for application to manned space exploration. These technologies included waste processing, water purification, and water filtration.

2. In response to the Office Action that was mailed on August 3, 2005, I am hereby submitting evidence that the method and/or apparatus disclosed in Iwatani (U.S. Patent 4,198,301) would be inoperable if adapted to include super-buoyant particles of the size claimed in the present application. Specifically, the siphon breakers 33 required in Iwatani would become clogged and inoperable if the super-buoyant particles of the size claimed in the present application were used as the floating filter medium 10.

3. Most practitioners of the art have turned away from the use of siphon breakers due to their well-known propensity to clog and malfunction, especially in waste waters and effluents having high suspended solids concentrations (i.e. having high concentrations of particulates suspended in water). Newer technologies, including a variety of valve technologies, are presently being used to overcome the clogging problems that are known to occur when using siphon breakers. Attached is a Table of references located on various web-sites indicating that it is widely known that siphon breakers have holes or openings of ¼ inch or greater. All the references cited deal with the handling of waste water, which is very similar in composition to the water that Iwatani's siphon breaker would have to contend with during operation. As indicated in Iwatani, in column 4, lines 27-34, the siphon breaker 33 has an air feeding port 33a at one end that is of the same construction as the strainer 6 in order to prevent the influx of filter medium 10.

   It is well known to a practitioner in the art that the smaller the size of the port, the more likely it is to become clogged by sludge or bacteria and thus become inoperable as a siphon breaker. In Iwatani's case, such clogging would lead to an inoperable siphon breaker which would in turn result in a

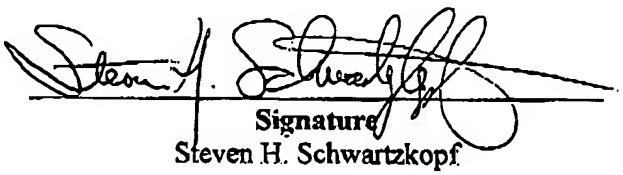
disastrous loss of most, if not all, of the buoyant media from the filter chamber as it was washed out with the draining effluent water during backwashing.

4. Buoyant media particles, such as polystyrene, are sufficiently malleable so that when pushed against a port under even slight pressure, they can become distorted and can actually partially penetrate and fill a port, thus causing port clogging. This media clogging effect would also make the siphon breaker inoperable as water drained from the filter chamber and the filter media was pressed against the port in the siphon breaker again resulting in disastrous loss of most or all of the buoyant media from the filter chamber.

5. If small diameter buoyant media as claimed in the present application were used in Iwatani's filter, the air feeding port would have to be a small enough opening to prevent clogging by media penetration. However, the size of the port in Iwatani's siphon breaker must be large enough to prevent the clogging by either filtered sludge particles or bacterial films. Consequently, this means that the buoyant media used in Iwatani's filter must be large enough to not penetrate and clog the large port openings that are required to prevent sludge or bacterial clogging.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date October 31, 2005



Signature

Steven H. Schwartzkopf

Source Document	Internet Address	Reference	Specification
Title 5 Pressure Distribution Design Guidance. Department of Environmental Protection. Executive Office of Environmental Affairs. Commonwealth of Massachusetts.	www.mass.gov/dep/brp/wwm/files/presdist.doc	Page 9	"If effluent is to be pumped down hill, a ¼ inch siphon-breaker hole or anti-siphon valve shall be installed in the supply line ..."
City of Houston Plumbing Code. City of Houston Building Code. The Construction Code of the City of Houston.	www.publicworks.cityofhouston.gov/planning/enforcement/docs/upcfinal.pdf	Paragraph 810.1. Page 27	"... trap shall have a three-fourths (3/4) inch (19.1mm) opening located at the highest point of the trap to serve as a siphon breaker."
Arkansas Department of Health. Rules and Regulations pertaining to Onsite Wastewater System.	www.healthyarkansas.com/rules_regs/Onsite_Wastewater_Draft_July_2004.pdf	Section 9.9.3. Page 44	"... a 0.25 (1/4) inch siphon-breaker hole shall be drilled in the pump effluent line ..."
Regulations to Govern Subsurface Sewage Disposal Systems. Rules of Department of Environmental and Conservation Division of Ground Water Protection - Chapter 1200-1-6. Regulations to Govern Subsurface Sewage Disposal Systems. State of Tennessee.	www.state.tn.us/sos/rules/1200/1200-01/1200-01-06.pdf	Rule 1200-1-6-.11 Design of Dosing Systems. Page 22.	"If the effluent is pumped downhill, a five-thirty seconds (5/32) inch siphon breaker hole must be drilled in the bottom of the supply line ..."
Regulations Governing On-Site Sewage Disposal Systems of the Williamson County Department of Sewage Disposal Management. Williamson County Tennessee	66.236.228.2/williamson/upload/contents/243/WC%20regs%20cert.pdf - Supplemental Result	Paragraph G.2.D. Page S16-9.	"...a 1/4-inch siphon-breaker hole must be drilled in the supply line."